



September 19, 2022

Dr. Cheryl Laskowski
Chief, Transportation Fuels Branch
California Air Resource Board 1001 I Street
Sacramento, CA 95814

Submitted electronically

RE: California Air Resources Board's Potential Future Changes to the Low Carbon Fuel Standard (LCFS) Program. August 18, 2022 2nd public workshop.

Dear Dr. Laskowski,

These comments are submitted by the Environmental Defense Fund (EDF). Representing over 3 million members and supporters nationwide, EDF has been actively pursuing solutions to global climate change for over 30 years, including almost a decade of efforts to reduce harmful pollution from aviation to mitigate climate change and deliver public health benefits by means of alternative fuels.

EDF welcomes the opportunity to provide comments on the August 18, 2022 "Potential Future Changes to the LCFS Program" workshop organized by the California Air Resources Board (CARB). EDF commends the agency for its continuing efforts to promote a cleaner, lower-carbon transportation sector. The comments below offer a number of recommendations for CARB to consider in its continued efforts to strengthen the program and maximize the program's benefits in mitigating greenhouse gas (GHG) emissions in a sustainable manner. These comments focus on one of the matters CARB is seeking feedback, namely, verification. We also provide some comments on the need for environmental safeguards for the new green hydrogen pathways under consideration.

Over the past decade, EDF has been highly engaged in climate policy at ICAO, leading and participating in expert working groups developing ICAO's Sustainability Framework for SAF -- an effort that builds heavily on California's LCFS as well as other programs from other parts of the world. In parallel, EDF has also been highly engaged in efforts at the United States Congress with regards SAF tax credits included in the Inflation Reduction Act of 2022.

LCFS verification program

In 2018, CARB approved amendments to add third-party verification requirements to the LCFS to ensure data completeness, accuracy, and conformance with the regulation, i.e., consistent with the verification programs under California's Cap-and-trade Program and international best practices. Now it is time to reassess the effectiveness of the LCFS verification program considering the latest developments at the international level as part of efforts at the United Nations, as well as at the Federal level with the Inflation Reduction Act,

which is poised to close the green premium gap between renewable diesel and SAF in jurisdictions such as California.

While EDF's comments would a priori be relevant for the full spectrum of fuels that generate credits under the LCFS, we would like to emphasize the importance of alternative fuels for aviation, as these become particularly relevant following Governor Newsom's letter to CARB on July 22 requesting bolder action for the aviation sector. This development opens the door for an ad-hoc aviation approach that would allow to spearhead and test the implementation of an enhanced LCFS verification program that is aligned with United Nations' International Civil Aviation Organization (ICAO) third-party verification program for sustainable aviation fuels (SAF).

ICAO's SAF verification program represents the international best practice that should guide any LCFS verification program reform. It has been approved with the agreement of the United States and adopted as best practice as a requirement for SAF to qualify for tax credits under the Inflation Reduction Act of 2022.

ICAO's SAF verification program provides a full-fledged monitoring, reporting and verification system including a high level of assurance. The ICAO's approach is the most comprehensive SAF Framework adopted to date as it ensures full supply-chain traceability and compliance with crucial sustainability criteria. This is essential to safeguard against direct and indirect negative effects on ecosystems and communities that are not captured or are underestimated by the LCFS lifecycle assessment approach and to promote sustainable development.

What's in ICAO's SAF sustainability criteria? The criteria cover 12 themes that encompass the three pillars of sustainability: social, environmental, economic. Provisions pertain to emissions reductions, carbon hotspots, water, soil, air, conservation, waste and chemicals, human and labor rights, land use rights and land use, water use rights, local and social development, and food security. For each theme, a principle a set of criteria are outlined. The criteria capture the binding provisions. To be eligible under ICAO's CORSIA to generate emissions reduction credits for compliance purposes, SAF must meet all the sustainability criteria, available [here](#).

How are SAF sustainability criteria implemented? The ICAO sustainability framework works as an umbrella standard that relies on ICAO-approved independent Sustainability Certification Schemes (SCS) for its implementation. These organizations define the sustainability certification requirements including the indicators and metrics to evaluate compliance with the criteria, set the requirements for certification bodies, auditors and accreditation bodies, and monitor the effectiveness of the assurance system. To become ICAO-approved SCS must undergo a thorough evaluation process and meet a comprehensive set of requirements in line with ICAO's eligibility framework and requirements for SCS, available [here](#).

The newly adopted sustainability criteria take a robust and equitable approach, placing environmental and social safeguards on the production of SAF across its entire supply chain. It also provides a harmonized approach to ensure that airlines across the world strive for

these same values of climate ambition, environmental integrity, human rights, and social equity.

Adopting measures to verify that the negative environmental and social consequences of certain feedstocks are properly addressed would also ensure a level playing field across alternative fuel pathways, including electrofuels, which are ready to become the key enabling technology for aviation. This is a sine-qua-non condition for ensuring resources are invested wisely and effectively and deliver on the imperative of the net-zero climate goal. Therefore, we urge CARB to consider the full range of environmental and social consequences of alternative fuels as it embarks in the reform of the LCFS and update its verification program accordingly.

New green hydrogen pathways

Finally, CARB is also seeking feedback on provisions related to potential new hydrogen pathways. EDF's High-Integrity SAF Handbook-Appendix E provides relevant insights on how to deploy drop-in electro-fuels for aviation or green hydrogen more generally with environmental integrity. It provides a way forward to prevent displacement emissions and additional land use demand for power generation, while providing flexible demand and storage that is critical for the scale-up of renewable-based power generation systems, and thereby expedite the energy transition of the power sector. The Handbook is available [here](#).

We would be glad to clarify or elaborate on any points made in the above comments. If there are any questions, CARB staff can feel free to contact Katelyn Roedner ([kroedner@edf.org](mailto: kroedner@edf.org)) and Dr. Pedro Piris-Cabezas ([ppiris@edf.org](mailto: ppiris@edf.org)).

Sincerely,

[Pedro Piris-Cabezas](#)
Director, Global Transport
Lead Senior Economist
Environmental Defense Fund